



## DesignLights Consortium Test Report

### Reference Standards

UL1598-2008

ANSI C82.77-10-2014

IES LM-79-2008

### Prepared For

## Beyond LED Technology

#### Test Laboratory:

UL-CCIC Company Limited

#### Test Laboratory Address:

No.2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China

#### Catalog Number

BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)

#### Project Number

4790851213

#### Report Number

4790851213\_5

#### Test Date

2023-06-05~2023-06-07

#### Issue Date

2023-06-09

#### Revision Date

N/A

#### Prepared By

*Elaine Zhao*

Zhao, Elaine

#### Approved By

*Elvis Wu*

Wu, Elvis

The results contained in this report pertain only to the tested sample.  
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## Test Summary

### DLC Technical Requirements V5.1- issued 2020-02-14

Requirement Category	Test Method	Requirements	Tolerance	Test Result
Minimum Light Output (lm/ft)-Luminaires	IES LM-79-2008	≥375	-10%	1357.32
Zonal Lumen Requirement 1(0°-60°)	IES LM-79-2008	≥40%	-3%	69.90%
Minimum Luminaire Efficacy (lm/W)-Luminaires	IES LM-79-2008	≥115	-3%	138.75
Allowable CCT (3500K)	IES LM-79-2008/ANSI C78.377-2015	3465±245	N/A	3401
Allowable CCT (4000K)	IES LM-79-2008/ANSI C78.377-2015	3985±275	N/A	4042
Allowable CCT (5000K)	IES LM-79-2008/ANSI C78.377-2015	5029±283	N/A	4930
Allowable CCT (3500K)	IES LM-79-2008/ANSI C78.377-2015	3465±245	N/A	3397
Allowable CCT (3500K)	IES LM-79-2008/ANSI C78.377-2015	3465±245	N/A	3394
Minimum CRI	IES LM-79-2008/CIE 13.3-1995	≥80	-1	80
Minimum R9	IES LM-79-2008	≥0	-1	3.0
Minimum Rf	IES LM-79-2008	≥70	-1	82
Minimum Rg	IES LM-79-2008	≥89	-1	96
Rcs,h1	IES LM-79-2008	-12%-23%	-1%	-12%
L70 Lumen maintenance (Hours)	N/A	≥50000	N/A	≥50000
L90 Lumen maintenance (Hours)	N/A	≥36000	N/A	≥36000
Power Factor	ANSI C82.77-10-2014	≥0.9	-0.03	0.9341
Total Harmonic Distortion (A%)	ANSI C82.77-10-2014	≤20%	5%	9.86%
In-Situ Temperature Measurement Test for LED 1 (°C)	UL1598-2008	≤105	N/A	61.2
In-Situ Temperature Measurement Test for Driver 1 (°C)	UL1598-2008	≤90	N/A	74.0
Max Chromaticity Shift (1000-6000h)	N/A	≤0.004	0.0004	0.0022
Minimum Luminaire Warranty (Years)	N/A	≥5	N/A	≥5

## Test List

Sample Received Date: 2023-05-15

Test Item	Test Date	Model Number	Tests Conducted By
Integrating Sphere Test	2023-06-06	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
Integrating Sphere Test	2023-06-06	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
Integrating Sphere Test	2023-06-06	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
Integrating Sphere Test	2023-06-06	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
Integrating Sphere Test	2023-06-06	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
Goniophotometer Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
Goniophotometer Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
THD and PF Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
THD and PF Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
THD and PF Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
THD and PF Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
THD and PF Test	2023-06-05	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X
In-Situ Temperature Measurement Test	2023-06-07	BLT-DP-B-4FT/54/46/38/YDM/ CCT(A3+B7)	Yang, Gavin X

### Remark (if any)

1. UL test equipment information is recorded on Meter Use in UL's Aurora database.
2. The accuracy method decision rule is applied when the compliance or verdict is made to the results of this report.

**Product Description**

**Lamp/Luminaire Description:** Direct Linear Ambient Luminaires

**Model Number:** BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)

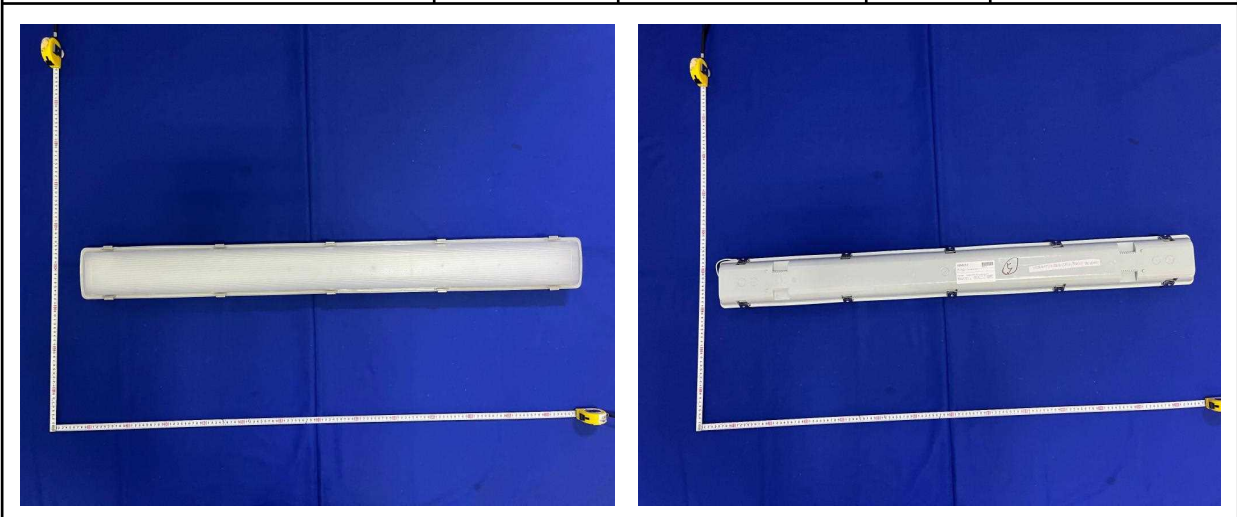
**Electrical Parameter:** 120-277V, 50/60Hz

**LED Package:** BXEN-xxE-21M-3AS

**Dimming Information:** Continuous dimming capability

**Products Scaled Value**

Model Number	CCT	Luminous Flux	Power	Luminous Efficacy
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	3500K	7452	54	138
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	4000K	7992	54	148
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	5000K	7560	54	140
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	3500K	6486	46	141
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	4000K	6946	46	151
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	5000K	6578	46	143
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	3500K	5472	38	144
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	4000K	5852	38	154
BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	5000K	5548	38	146



### Integrating Sphere Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

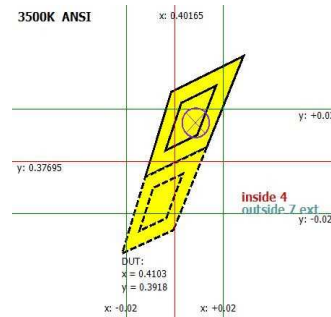
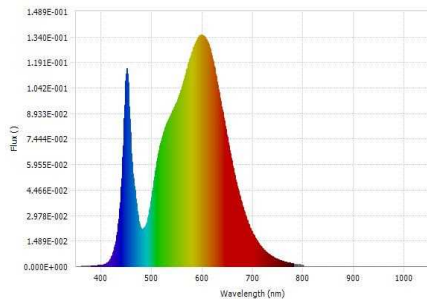
1. The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.  
 2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.  
 3. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

#### Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.4	119.91	60	0.4483	53.135	0.9884	Horizontal

#### Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3401	80	3.0	-0.0006	7384.11	138.97	1846.03



Luminous Flux (lm)	7384.11	Chrom x	0.4103
Chrom y	0.3918	Chrom u	0.2385
Chrom v	0.3416	Duv	-0.0006
Chrom u'	0.2385	Chrom v'	0.5125
CCT (K)	3401	Luminous Efficacy (lm/W)	138.97
Ra	80	R1	79.0
R2	87.0	R3	93.0
R4	80.0	R5	78.0
R6	82.0	R7	84.0
R8	60.0	R9	3.0
R10	69.0	R11	78.0
R12	59.0	R13	81.0
R14	96.0	R15	72.0
Rf	82	Rg	97
Rcs,h1	-13%		

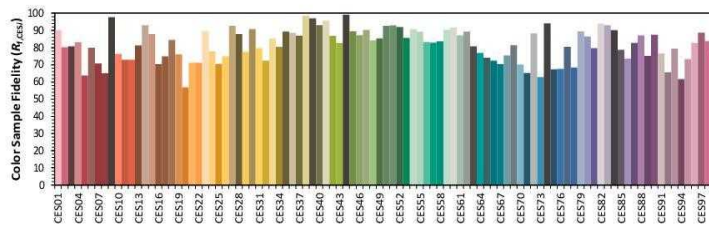
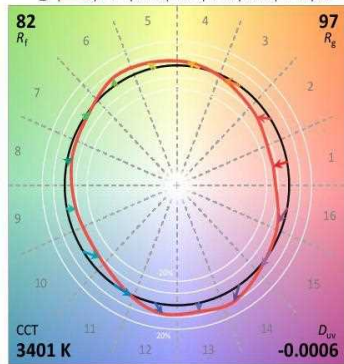
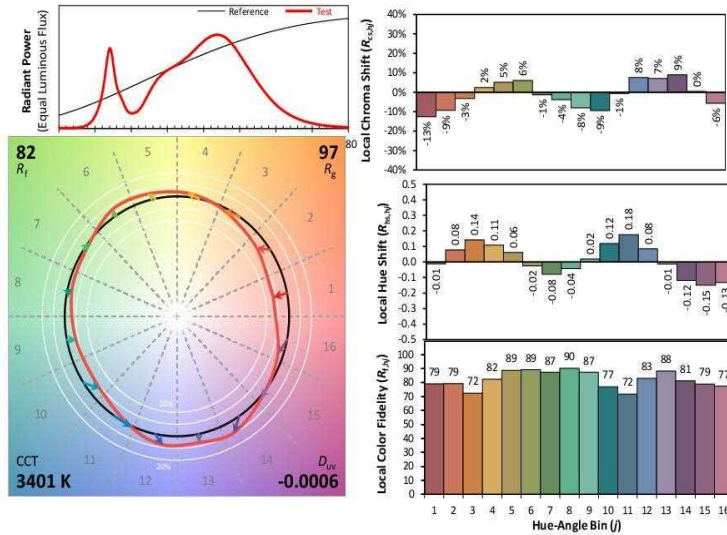
# Integrating Sphere Test (Cont'd)

## TM-30 Report

### ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-xxE-21M-3AS  
 Date: 6/6/2023

Manufacturer: Beyond LED TECHNOLOGY  
 Model: BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4103  
 y 0.3918  
 u' 0.2385  
 v' 0.5125

CIE 13.3-1995  
 (CRI)  
 $R_a$  80  
 $R_g$  3

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

### Integrating Sphere Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)		<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45	

#### Test Method

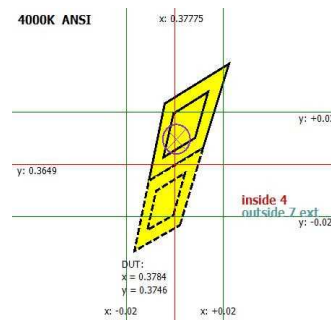
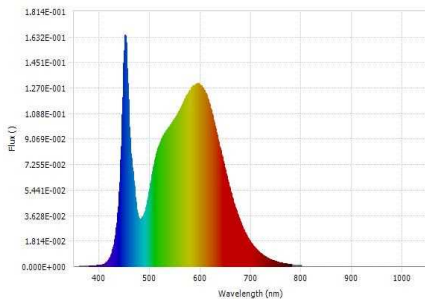
1. The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.  
 2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.  
 3. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

#### Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.4	119.93	60	0.4326	51.237	0.9875	Horizontal

#### Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
4042	83	10.0	-0.0004	7751.74	151.29	1937.94



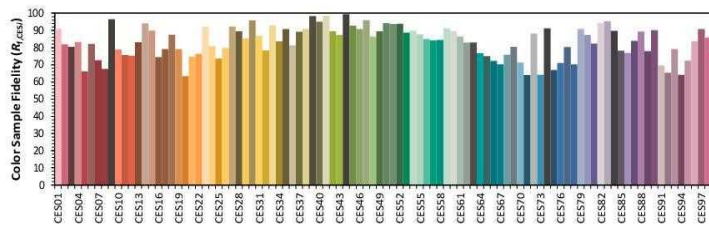
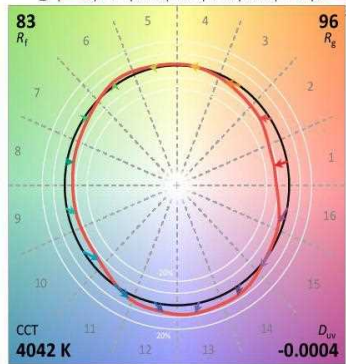
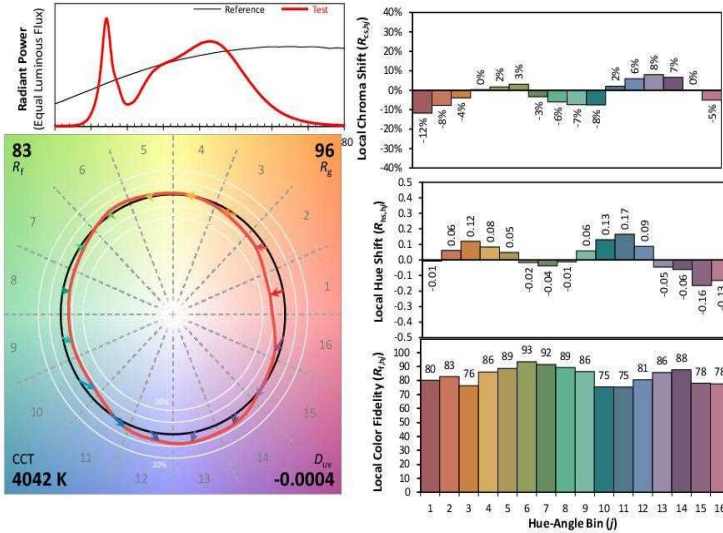
Luminous Flux (lm)	7751.74	Chrom x	0.3784
Chrom y	0.3746	Chrom u	0.2246
Chrom v	0.3335	Duv	-0.0004
Chrom u'	0.2246	Chrom v'	0.5003
CCT (K)	4042	Luminous Efficacy (lm/W)	151.29
Ra	83	R1	81.0
R2	88.0	R3	93.0
R4	82.0	R5	81.0
R6	83.0	R7	86.0
R8	65.0	R9	10.0
R10	72.0	R11	81.0
R12	59.0	R13	83.0
R14	96.0	R15	76.0
Rf	83	Rg	96
Rcs,h1	-12%		

# Integrating Sphere Test (Cont'd)

## TM-30 Report

### ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-xxE-21M-3AS      Manufacturer: Beyond LED TECHNOLOGY  
 Date: 6/6/2023      Model: BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3784	CIE 13.3-1995 (CRI)	
y	0.3746		
$u'$	0.2246		
$v'$	0.5003		
		$R_a$	83
		$R_g$	10

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## Integrating Sphere Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

### Test Method

1. The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.

2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.

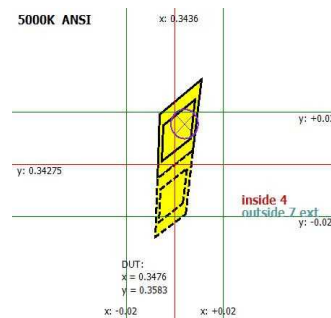
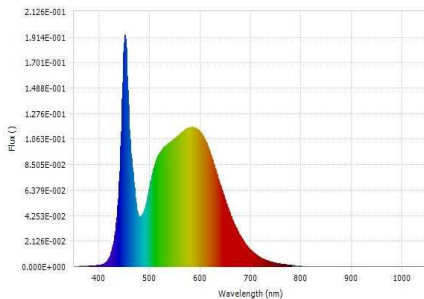
3. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

### Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.4	119.89	60	0.4492	53.246	0.9887	Horizontal

### Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
4930	83	7.0	0.0023	7537.97	141.57	1884.49



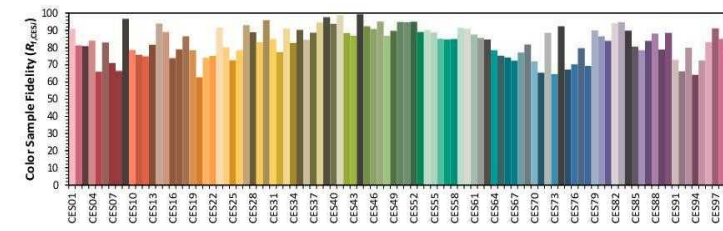
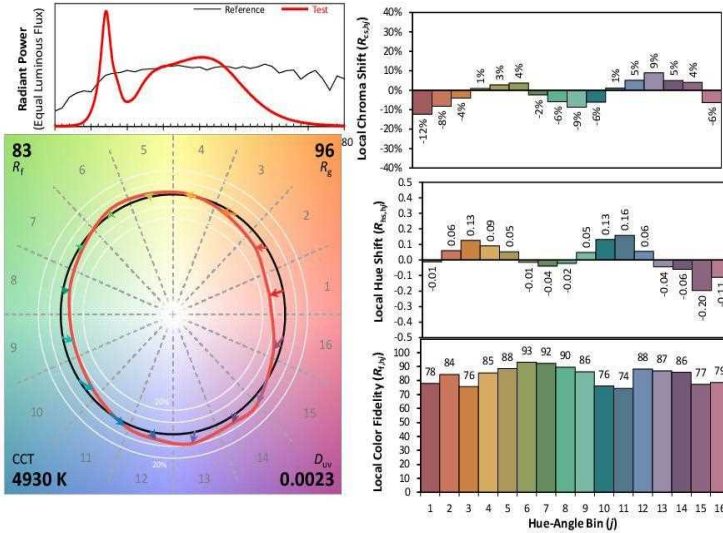
Luminous Flux (lm)	7537.97	Chrom x	0.3476
Chrom y	0.3583	Chrom u	0.2105
Chrom v	0.3255	Duv	0.0023
Chrom u'	0.2105	Chrom v'	0.4883
CCT (K)	4930	Luminous Efficacy (lm/W)	141.57
Ra	83	R1	81.0
R2	87.0	R3	92.0
R4	82.0	R5	81.0
R6	82.0	R7	88.0
R8	67.0	R9	7.0
R10	70.0	R11	81.0
R12	56.0	R13	82.0
R14	96.0	R15	75.0
Rf	83	Rg	96
Rcs,h1	-12%		

# Integrating Sphere Test (Cont'd)

## TM-30 Report

### ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-xxE-21M-3AS      Manufacturer: Beyond LED TECHNOLOGY  
 Date: 6/6/2023      Model: BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3476
y	0.3583
u'	0.2105
v'	0.4883

CIE 13.3-1995 (CRI)	
$R_a$	83
$R_g$	7

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### Integrating Sphere Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)		<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45	

#### Test Method

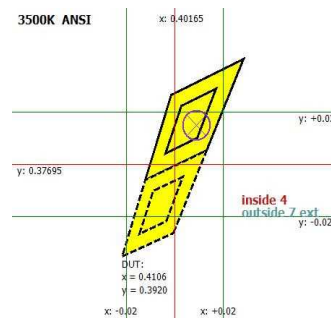
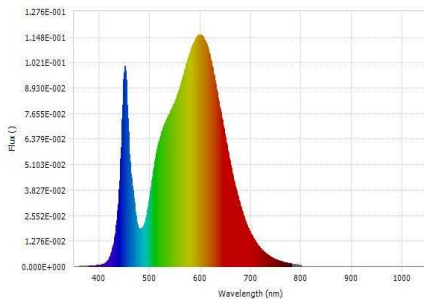
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#### Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.4	119.96	60	0.3743	44.211	0.9847	Horizontal

#### Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3397	81	3.0	-0.0006	6326.57	143.10	1581.64



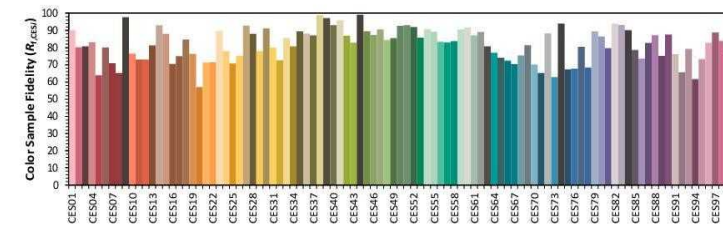
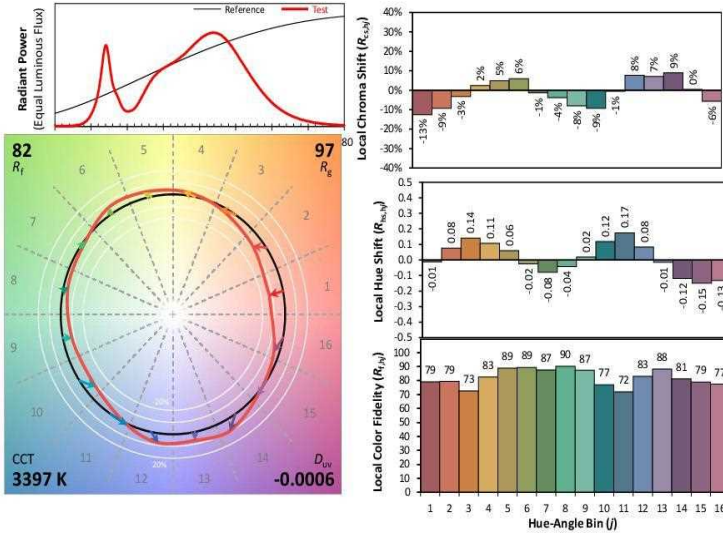
Luminous Flux (lm)	6326.57	Chrom x	0.4106
Chrom y	0.3920	Chrom u	0.2386
Chrom v	0.3417	Duv	-0.0006
Chrom u'	0.2386	Chrom v'	0.5126
CCT (K)	3397	Luminous Efficacy (lm/W)	143.10
Ra	81	R1	79.0
R2	87.0	R3	93.0
R4	80.0	R5	78.0
R6	82.0	R7	84.0
R8	61.0	R9	3.0
R10	69.0	R11	78.0
R12	59.0	R13	81.0
R14	96.0	R15	73.0
Rf	82	Rg	97
Rcs,h1	-13%		

# Integrating Sphere Test (Cont'd)

## TM-30 Report

### ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-xxE-21M-3AS      Manufacturer: Beyond LED TECHNOLOGY  
 Date: 6/6/2023      Model: BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4106
y	0.3920
u'	0.2386
v'	0.5126

CIE 13.3-1995 (CRI)	
$R_a$	81
$R_g$	3

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### Integrating Sphere Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
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#### Test Method

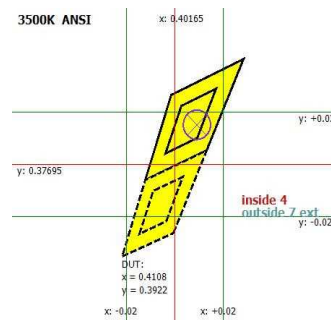
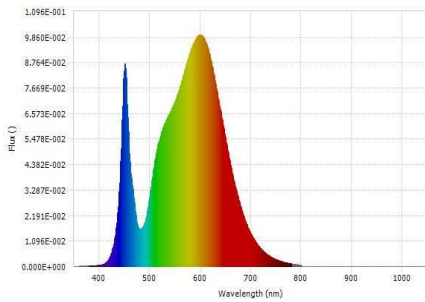
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#### Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
24.4	119.99	60	0.3156	37.052	0.9784	Horizontal

#### Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3394	81	3.0	-0.0005	5429.29	146.53	1357.32



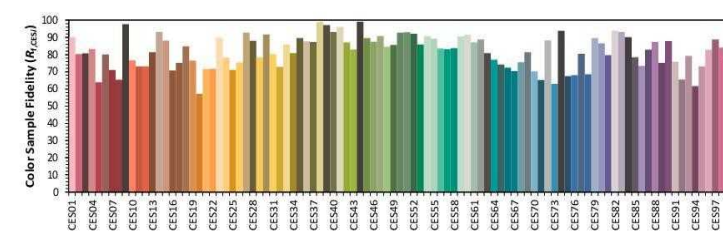
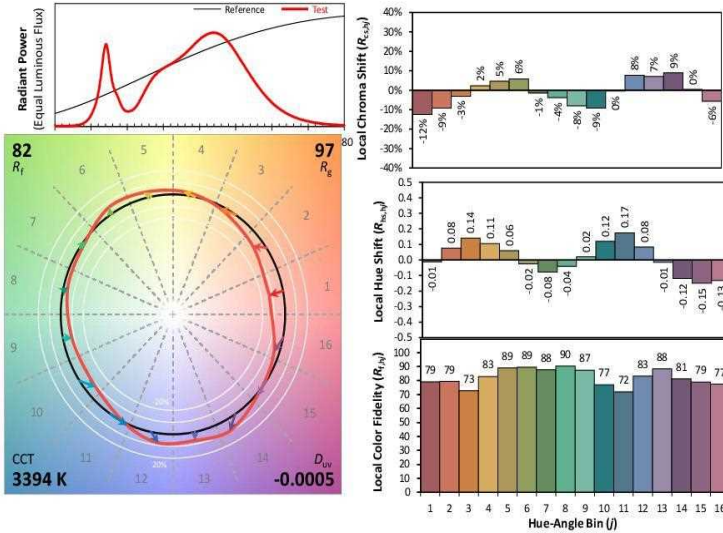
Luminous Flux (lm)	5429.29	Chrom x	0.4108
Chrom y	0.3922	Chrom u	0.2387
Chrom v	0.3418	Duv	-0.0005
Chrom u'	0.2387	Chrom v'	0.5127
CCT (K)	3394	Luminous Efficacy (lm/W)	146.53
Ra	81	R1	79.0
R2	87.0	R3	93.0
R4	80.0	R5	79.0
R6	82.0	R7	84.0
R8	61.0	R9	3.0
R10	69.0	R11	78.0
R12	59.0	R13	81.0
R14	96.0	R15	73.0
Rf	82	Rg	97
Rcs,h1	-12%		

# Integrating Sphere Test (Cont'd)

## TM-30 Report

### ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-xxE-21M-3AS      Manufacturer: Beyond LED TECHNOLOGY  
 Date: 6/6/2023      Model: BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4108
y	0.3922
u'	0.2387
v'	0.5127

CIE 13.3-1995 (CRI)	
$R_a$	81
$R_g$	3

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

## Goniophotometer Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

### Test Method

- 1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
- 2.Photometric parameters were measured using a type C goniophotometer and software.
- 3.The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is rated current 3.8581A, 3.8558A, 3.8466A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
- 4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonallumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

### Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.6	120.05	60	0.4436	53.102	0.9970	4.27%	Horizontal

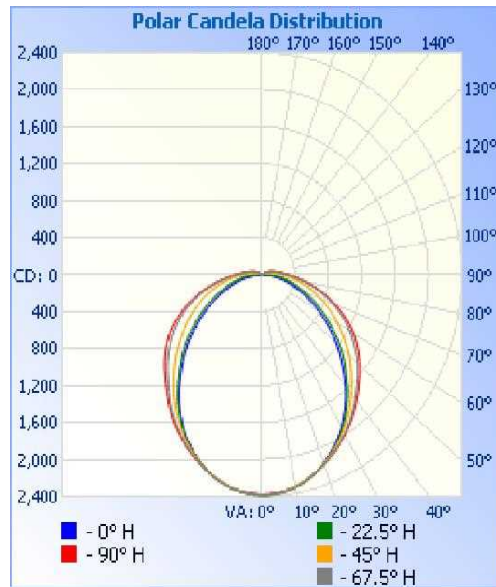
### Test Results

Luminous Flux (lm)	Zonal Lumen Requirement 1	Zonal Lumen Requirement 2	Beam Angle (50%)		Luminous Efficacy (lm/W)
	0°-60°	N/A	Horizontal Spread	Vertical Spread	
7367.8	70.30%	N/A	125.6	98.8	138.75

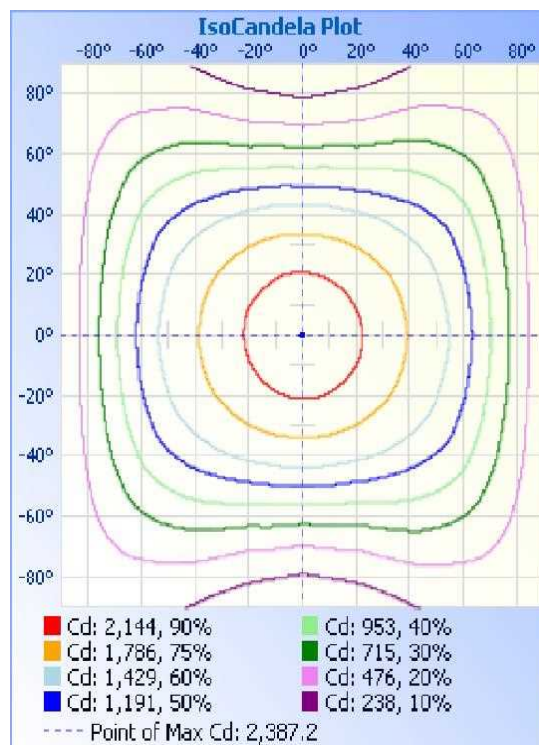
Backlight	Uplight	Glare
N/A	N/A	N/A

UGR		Spacing Criteria (0-180°)	Spacing Criteria (90°-270°)
Crosswise	Endwise		
N/A	N/A	1.20	1.26

**Goniophotometer Test (Cont'd)**  
**Polar Candela Distribution**



**IsoCandela Plot**





**Goniophotometer Test (Cont'd)**  
Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1812.8	24.60%
0-40	2944.7	40.00%
0-60	5178.0	70.30%
60-90	1838.5	25.00%
70-100	1137.0	15.40%
90-120	315.4	4.30%
0-90	7016.5	95.20%
90-180	351.3	4.80%
0-180	7367.8	100.00%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-5	56.6	0.80%	90-95	101.7	1.40%
5-10	167.6	2.30%	95-100	74.4	1.00%
10-15	271.8	3.70%	100-105	54.6	0.70%
15-20	364.8	5.00%	105-110	39.0	0.50%
20-25	444.2	6.00%	110-115	27.4	0.40%
25-30	507.7	6.90%	115-120	18.4	0.20%
30-35	553.4	7.50%	120-125	11.4	0.20%
35-40	578.5	7.90%	125-130	6.1	0.10%
40-45	584.8	7.90%	130-135	3.6	0.00%
45-50	577.1	7.80%	135-140	2.6	0.00%
50-55	554.4	7.50%	140-145	2.4	0.00%
55-60	517.1	7.00%	145-150	2.2	0.00%
60-65	469.1	6.40%	150-155	2.0	0.00%
65-70	408.5	5.50%	155-160	1.7	0.00%
70-75	341.3	4.60%	160-165	1.5	0.00%
75-80	271.4	3.70%	165-170	1.2	0.00%
80-85	203.4	2.80%	170-175	0.8	0.00%
85-90	144.7	2.00%	175-180	0.3	0.00%

## Goniophotometer Test (Cont'd)

### Intensity Data(cd)

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382	2382
1	2381	2387	2380	2382	2373	2372	2370	2375	2380	2385	2378	2379	2372	2369	2371	2374	2379
2	2377	2386	2378	2380	2371	2369	2368	2374	2377	2382	2376	2377	2368	2368	2368	2371	2376
3	2374	2383	2376	2378	2369	2367	2365	2369	2372	2380	2374	2374	2366	2366	2364	2370	2373
4	2372	2378	2373	2374	2366	2365	2359	2364	2368	2375	2368	2371	2365	2361	2359	2363	2368
5	2365	2372	2365	2369	2363	2360	2354	2356	2359	2368	2362	2366	2359	2358	2353	2357	2362
6	2358	2367	2359	2364	2358	2355	2348	2351	2353	2362	2355	2359	2355	2354	2349	2349	2357
7	2351	2360	2353	2357	2352	2350	2344	2345	2348	2355	2346	2354	2350	2349	2342	2345	2350
8	2344	2352	2345	2351	2345	2343	2336	2337	2340	2348	2339	2346	2342	2341	2336	2337	2342
9	2334	2343	2333	2341	2335	2336	2326	2328	2330	2339	2329	2335	2333	2333	2329	2327	2333
10	2327	2333	2324	2329	2326	2324	2318	2317	2319	2327	2319	2324	2322	2323	2318	2316	2323
11	2316	2319	2311	2318	2314	2316	2307	2306	2306	2314	2306	2312	2311	2313	2310	2306	2310
12	2303	2310	2300	2306	2300	2305	2297	2293	2296	2302	2293	2301	2299	2303	2298	2295	2299
13	2288	2296	2287	2293	2289	2292	2284	2282	2283	2290	2280	2286	2287	2291	2286	2282	2287
14	2273	2284	2274	2279	2276	2278	2273	2269	2269	2277	2268	2273	2273	2277	2272	2271	2272
15	2260	2269	2260	2266	2262	2261	2256	2253	2253	2259	2252	2260	2258	2261	2258	2255	2259
16	2244	2253	2243	2249	2243	2245	2240	2237	2239	2245	2236	2244	2241	2244	2240	2240	2241
17	2227	2233	2227	2233	2230	2227	2222	2220	2219	2225	2219	2228	2226	2226	2223	2222	2223
18	2210	2215	2211	2218	2213	2209	2203	2201	2200	2205	2201	2209	2209	2207	2204	2202	2204
19	2186	2196	2192	2201	2196	2190	2181	2180	2178	2185	2183	2194	2192	2189	2185	2184	2184
20	2167	2176	2174	2186	2181	2174	2163	2159	2158	2162	2162	2179	2177	2172	2164	2163	2164
25	2047	2061	2068	2093	2094	2084	2061	2045	2038	2048	2057	2083	2088	2080	2061	2047	2045
30	1909	1926	1953	1988	1997	1983	1946	1912	1896	1912	1935	1976	1990	1981	1946	1914	1906
35	1743	1773	1817	1869	1886	1864	1811	1758	1733	1754	1799	1859	1878	1861	1809	1759	1741
40	1560	1598	1667	1740	1767	1738	1660	1580	1544	1576	1648	1727	1758	1731	1656	1582	1557
45	1362	1417	1515	1617	1652	1608	1503	1400	1349	1394	1495	1601	1641	1603	1502	1403	1364
50	1174	1240	1367	1496	1536	1483	1353	1222	1162	1217	1349	1483	1532	1481	1350	1221	1173
55	983	1050	1207	1358	1408	1355	1199	1038	968	1030	1191	1355	1416	1361	1198	1039	980
60	795	871	1052	1218	1267	1215	1050	867	785	852	1042	1225	1284	1233	1056	871	798
65	629	704	901	1066	1110	1063	899	704	619	690	900	1078	1129	1083	910	705	627
70	472	549	750	900	935	895	745	544	461	539	754	916	958	921	765	552	472
75	333	415	608	735	760	730	603	411	326	409	614	748	779	753	624	419	335
80	217	296	470	571	589	567	466	293	208	292	476	580	603	587	484	302	215
85	117	197	347	429	443	425	343	194	110	195	350	433	451	440	360	205	117
90	39	122	248	316	328	313	245	120	36	120	249	316	330	320	257	128	40
95	28	81	180	236	245	233	178	80	28	80	179	232	243	235	185	85	28
100	23	53	132	181	191	180	132	53	23	51	131	177	187	179	135	56	23
105	19	33	95	140	151	140	96	33	18	30	93	136	146	137	97	34	19
110	15	17	67	107	119	105	66	16	15	14	64	103	114	104	68	17	15
115	11	11	41	80	92	79	45	11	11	11	38	76	89	77	45	11	12
120	9	9	18	57	69	57	22	8	10	8	16	54	66	55	22	8	10
125	8	8	10	31	46	33	11	8	8	7	8	28	43	31	11	6	8
130	7	7	6	15	23	18	8	6	6	6	6	13	22	17	7	6	7
135	6	6	7	7	12	9	8	6	6	6	6	7	12	8	8	6	6
140	6	6	7	7	8	8	8	6	6	6	7	7	9	8	7	6	6
145	7	7	7	7	9	8	8	7	7	6	7	7	8	9	8	6	7
150	7	8	8	8	8	7	7	7	7	7	8	7	8	8	7	8	8
155	8	9	8	8	8	8	8	8	7	7	8	8	9	7	8	8	9
160	10	9	9	9	8	8	10	10	10	9	9	8	8	9	9	9	9
165	11	10	10	10	10	10	11	11	11	10	10	10	9	9	10	10	11
170	12	12	11	10	10	10	11	11	12	11	11	10	10	10	10	12	12
175	12	12	12	11	11	11	11	12	12	12	12	10	10	10	11	12	12
180	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

## Goniophotometer Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

### Test Method

- 1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
- 2.Photometric parameters were measured using a type C goniophotometer and software.
- 3.The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is rated current 3.8581A, 3.8558A, 3.8466A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
- 4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonallumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

### Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.7	120.06	60	0.4459	53.374	0.9971	4.03%	Horizontal

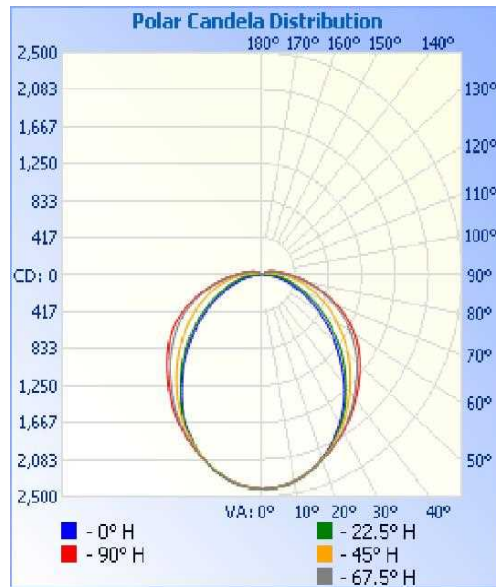
### Test Results

Luminous Flux (lm)	Zonal Lumen Requirement 1	Zonal Lumen Requirement 2	Beam Angle (50%)		Luminous Efficacy (lm/W)
	0°-60°	N/A	Horizontal Spread	Vertical Spread	
7538.0	69.90%	N/A	127.7	99.2	141.23

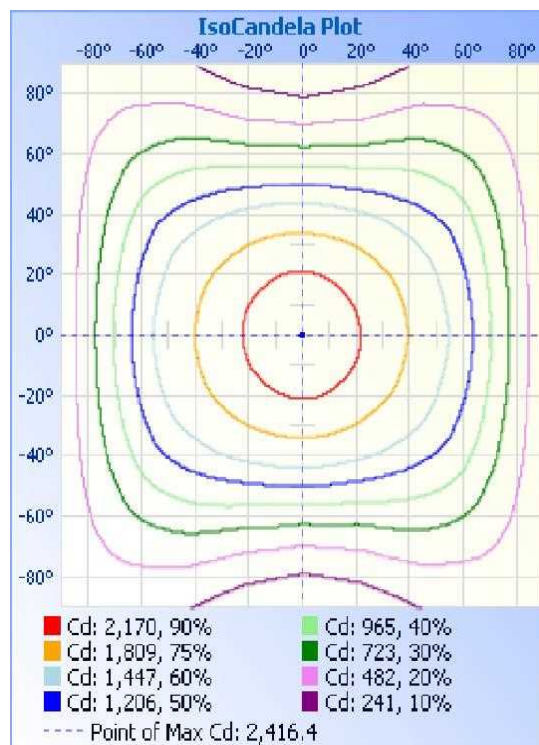
Backlight	Uplight	Glare
N/A	N/A	N/A

UGR		Spacing Criteria (0-180°)	Spacing Criteria (90°-270°)
Crosswise	Endwise		
N/A	N/A	1.20	1.28

**Goniophotometer Test (Cont'd)**  
**Polar Candela Distribution**



**IsoCandela Plot**



**Goniophotometer Test (Cont'd)**  
Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1835.2	24.30%
0-40	2986.4	39.60%
0-60	5271.5	69.90%
60-90	1903.7	25.30%
70-100	1180.7	15.70%
90-120	326.0	4.30%
0-90	7175.2	95.20%
90-180	362.9	4.80%
0-180	7538.0	100.00%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-5	57.4	0.80%	90-95	105.6	1.40%
5-10	169.7	2.30%	95-100	76.8	1.00%
10-15	275.0	3.60%	100-105	56.1	0.70%
15-20	369.1	4.90%	105-110	40.1	0.50%
20-25	449.8	6.00%	110-115	28.2	0.40%
25-30	514.3	6.80%	115-120	19.0	0.30%
30-35	562.1	7.50%	120-125	11.8	0.20%
35-40	589.1	7.80%	125-130	6.3	0.10%
40-45	597.1	7.90%	130-135	3.7	0.00%
45-50	590.0	7.80%	135-140	2.7	0.00%
50-55	567.2	7.50%	140-145	2.5	0.00%
55-60	530.7	7.00%	145-150	2.2	0.00%
60-65	483.1	6.40%	150-155	2.0	0.00%
65-70	422.3	5.60%	155-160	1.8	0.00%
70-75	353.9	4.70%	160-165	1.5	0.00%
75-80	281.8	3.70%	165-170	1.3	0.00%
80-85	211.7	2.80%	170-175	0.8	0.00%
85-90	150.9	2.00%	175-180	0.3	0.00%

**Goniophotometer Test (Cont'd)**  
**Intensity Data(cd)**

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412	2412
1	2410	2416	2411	2411	2402	2402	2401	2406	2408	2414	2407	2408	2400	2400	2401	2404	2408
2	2408	2416	2409	2410	2401	2400	2398	2402	2405	2412	2406	2407	2399	2397	2396	2403	2407
3	2404	2414	2407	2407	2399	2398	2395	2400	2401	2409	2401	2404	2394	2394	2394	2399	2404
4	2400	2409	2402	2404	2398	2392	2390	2394	2396	2403	2397	2399	2392	2392	2388	2393	2399
5	2394	2403	2396	2397	2394	2389	2383	2386	2389	2397	2389	2394	2388	2386	2383	2386	2394
6	2389	2398	2389	2394	2387	2385	2379	2381	2382	2391	2382	2386	2381	2380	2377	2380	2386
7	2382	2392	2384	2387	2382	2380	2372	2372	2377	2383	2373	2379	2375	2375	2372	2374	2379
8	2374	2384	2376	2380	2375	2374	2366	2365	2369	2375	2364	2370	2366	2368	2362	2366	2373
9	2367	2375	2365	2372	2366	2365	2358	2355	2359	2365	2355	2361	2356	2359	2356	2358	2365
10	2358	2364	2353	2360	2353	2354	2349	2345	2347	2353	2342	2348	2345	2349	2347	2347	2354
11	2345	2353	2343	2349	2343	2346	2337	2332	2335	2341	2329	2333	2331	2336	2335	2336	2343
12	2334	2340	2330	2337	2331	2335	2327	2321	2324	2329	2314	2322	2317	2325	2325	2325	2331
13	2321	2330	2317	2323	2319	2322	2316	2309	2308	2316	2301	2308	2306	2312	2311	2312	2319
14	2306	2316	2305	2311	2306	2307	2300	2296	2296	2300	2286	2292	2291	2298	2298	2299	2306
15	2291	2300	2290	2297	2291	2292	2287	2280	2281	2284	2270	2278	2275	2281	2282	2284	2291
16	2276	2284	2276	2282	2276	2275	2267	2265	2263	2266	2255	2260	2260	2263	2264	2268	2274
17	2259	2268	2260	2266	2259	2257	2251	2247	2245	2248	2236	2244	2241	2244	2245	2251	2256
18	2241	2247	2243	2251	2243	2239	2232	2227	2225	2228	2218	2226	2223	2225	2226	2232	2239
19	2219	2228	2224	2235	2229	2222	2212	2208	2204	2207	2199	2211	2207	2206	2205	2212	2218
20	2200	2208	2206	2220	2213	2206	2194	2186	2185	2186	2179	2194	2192	2189	2186	2191	2198
25	2081	2096	2103	2128	2134	2119	2094	2070	2061	2066	2072	2097	2105	2098	2082	2076	2081
30	1941	1962	1989	2026	2039	2020	1981	1939	1919	1927	1950	1991	2004	2000	1970	1941	1941
35	1777	1809	1859	1920	1940	1913	1847	1783	1754	1767	1812	1876	1906	1886	1834	1786	1777
40	1594	1634	1712	1795	1825	1789	1700	1608	1564	1589	1662	1748	1784	1759	1684	1610	1590
45	1394	1455	1562	1672	1712	1661	1547	1428	1370	1409	1511	1620	1666	1629	1530	1430	1396
50	1204	1274	1413	1554	1602	1539	1393	1246	1175	1223	1359	1499	1548	1501	1375	1246	1203
55	1010	1084	1250	1419	1479	1414	1238	1062	979	1036	1197	1365	1432	1377	1220	1061	1006
60	820	901	1095	1280	1341	1276	1089	891	797	859	1048	1235	1306	1251	1075	891	823
65	650	730	943	1129	1184	1124	936	720	625	692	900	1093	1153	1108	928	723	650
70	490	571	789	963	1004	955	781	560	466	539	758	929	974	942	782	565	488
75	347	432	644	790	819	781	636	423	328	406	616	756	790	769	640	431	348
80	227	310	501	618	638	610	493	302	208	289	476	584	610	598	499	311	224
85	123	207	372	465	481	459	366	202	110	192	351	436	455	447	370	213	125
90	43	128	266	342	355	338	261	125	36	118	249	319	334	327	265	134	43
95	29	84	191	251	262	248	190	83	27	78	178	234	246	239	190	88	29
100	24	55	140	191	202	189	138	55	22	50	129	177	189	181	138	58	24
105	19	34	100	148	159	146	100	34	18	29	92	136	148	139	99	35	19
110	15	17	70	112	124	112	70	18	15	15	63	104	116	106	69	17	15
115	12	11	43	84	96	84	47	11	12	10	38	77	89	79	46	12	12
120	10	9	19	60	73	60	23	9	10	8	15	55	66	57	22	9	10
125	8	8	10	33	49	35	12	8	8	7	8	28	44	33	12	7	9
130	7	6	7	16	24	18	8	7	6	6	6	14	22	17	7	6	6
135	6	6	7	8	12	9	8	6	6	6	6	7	11	8	7	6	6
140	6	7	7	7	9	9	8	6	6	6	7	7	9	8	8	6	6
145	6	7	7	7	9	8	8	7	7	7	7	7	8	8	8	6	7
150	7	7	8	6	8	8	8	7	8	8	8	7	8	8	8	7	7
155	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	9
160	10	9	9	9	9	9	9	9	10	9	9	8	8	8	8	9	10
165	10	10	10	10	9	10	10	11	10	10	11	9	9	10	10	11	11
170	12	11	11	10	10	10	12	12	12	12	11	11	11	10	11	11	12
175	12	11	11	11	11	11	11	12	12	12	11	10	10	11	11	12	12
180	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

### THD and PF Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

#### Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.6	120.05	60	0.4436	53.102	0.9970	4.27%	Horizontal
25.6	277.19	60	0.1967	52.38	0.9610	6.51%	Horizontal

### THD and PF Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

#### Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.6	120.06	60	0.4291	51.33	0.9968	4.63%	Horizontal
25.6	277.11	60	0.1910	50.77	0.9591	7.10%	Horizontal



### THD and PF Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

#### Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.6	120.05	60	0.4458	53.37	0.9970	4.03%	Horizontal
25.6	277.13	60	0.1976	52.58	0.9611	6.44%	Horizontal

### THD and PF Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

#### Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.6	120.02	60	0.3697	44.22	0.9967	4.29%	Horizontal
25.6	277.13	60	0.1667	43.84	0.9488	7.69%	Horizontal

### THD and PF Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

#### Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.6	120.06	60	0.3103	37.08	0.9954	4.85%	Horizontal
25.6	277.13	60	0.1431	37.02	0.9341	9.86%	Horizontal

## In-Situ Temperature Measurement Test

<b>Model No.</b>	BLT-DP-B-4FT/54/46/38/YDM/CCT(A3+B7)	<b>Sample ID.</b>	6073804
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### Test Method

- In-Situ Temperature Measurement Test is conducted according to the UL 1598-2008, Section 14.
- The testing was conducted in a room with ambient temperature of 25 °C ± 5 °C. The apparatus construction followed those described in UL1598-2008 for normal temperature testing. Thermocouples were placed on the LED package in the locations indicated by LM-80 report. Thermocouples were placed on the LED driver case in the locations specified by the manufacture if necessary. The temperature was recorded after the lamp was operated by 7.5 hours.
- The data and photos in LM-80 test report is provided by the customer/ The data and photos in driver specification is provided by the customer.

### In-Situ Temperature Measurement Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.0	120.05	60	0.4436	53.102	0.9970	4.27%	Horizontal

### Test Results (LEDs)

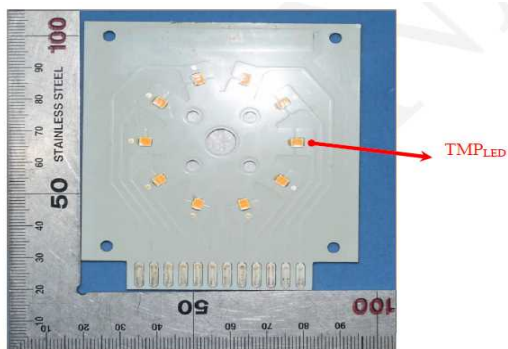
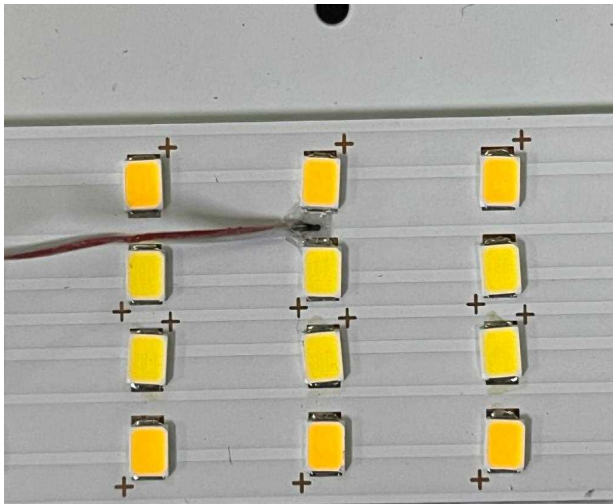
Thermocouple Location	Declared Light Source Current (mA)	Temperature for Light Source (°C)		Max Chromaticity Shift (1000-6000h)	LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp (°C)
		Test Result	Test Result (Correct to 25 °C)				
Ambient TEMP	N/A	24.0	25.0				
TMP of Location 1	85	60.2	61.2	0.0022	BXEN-xxE-21M-3AS	150	105

### Test Results (Drivers)

Thermocouple Location	Temperature for Driver (°C)		Driver Model Number	Driver Limit Temp (°C)
	Test Result	Test Result (Correct to 25 °C)		
Ambient TEMP	24.0	25.0		
TMP of Location 1	73.0	74.0	SIL50-I1200 120-277 W D1+D3 R	90

## In-Situ Temperature Measurement Test (Cont'd)

### Test Photos for Ts Point of Light Sources & Tc Point of Drivers





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